

Nutritional composition and acceptability of biscuits fortified with palm weevil larvae (*Rhynchophorus phoenicis* Fabricius) and orange-fleshed sweet potato among pregnant women

ABSTRACT

Edible insects are currently being promoted as an inexpensive alternative source of protein in underdeveloped countries due to the rising cost of conventional animal protein and the foreseen future deficit in its supply. A supplemental palm weevil larvae and orange-fleshed sweet potato biscuit was developed as part of efforts to understand the nutritional benefits of edible insects and to predict whether these benefits will contribute to better nutrition among pregnant women in Ghana. The palm weevil larvae flour and the orange-fleshed sweet potato flour were mixed with wheat flour in three formulations that had 0, 35, and 70% of palm weevil larvae flour, before being made into biscuits. The biscuits were subjected to proximate and mineral content analysis and sensory evaluation. Proximate and mineral composition of the biscuits increased with increasing levels of palm weevil larvae flour substitution. Among the blends, biscuits containing 70% palm weevil larvae had the highest energy and fat content, and protein content also increased by 45% compared with biscuits made from 100% wheat flour. Calcium, iron, and zinc levels also increased with increasing levels of palm weevil larvae flour substitution. However, carbohydrate and crude fiber concentrations of the biscuits decreased with increasing substitution. The overall acceptability of the biscuits as determined by sensory evaluation using pregnant women was high. Biscuits fortified with palm weevil larvae can be a nutritious snack for pregnant women.

Keyword: Fortified biscuits; Nutrition; Orange-fleshed sweet potato; Pregnant women; Rats; *Rhynchophorus phoenicis* Fabricius